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(21) International Application Number: PCT/NO99/00178 (22) International Filing Date: 2 June 1999 (02.06.99) (30) Priority Data: 19982495 2 June 1998 (02.06.98) NO (71) Applicant (for all designated States except US): NET 2 INTERAKTIV AS [NO/NO]; Postboks 2, N-5002 Bergen (NO). (72) Inventor; and (75) Inventor/Applicant (for US only): LAURITZEN, Freddy [NO/NO]; Nye Sandviks vei 68, N-5035 Bergen (NO). (74) Agent: OSLO PATENTKONTOR AS; Postboks 7007 M, N-0306 Oslo (NO).		(81) Designated States: AE, AL, AM, AT, AT (Utility model), AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CU, CZ, CZ (Utility model), DE, DE (Utility model), DK, DK (Utility model), EE, EE (Utility model), ES, FI, FI (Utility model), GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SK (Utility model), SL, TJ, TM, TR, TT, UA, UG, US, UZ, VN, YU, ZA, ZW, ARIPO patent (GH, GM, KE, LS, MW, SD, SL, SZ, UG, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG). Published Without international search report and to be republished upon receipt of that report.
(54) Title: SMS-BASED CHAT LINE - SMSCHAT (57) Abstract <p>The present invention relates to an arrangement and a method for exchange of messages between users in a telecommunications network. Messages are sent from the users mobile phones as SMS messages to a SMS netgate in the telecommunication network. The messages are sent from the netgate to a smsChat server that processes the messages and generates Teletext pages which are transferred to a Teletext inserter which publishes the pages on a public television network.</p>		

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SMS-BASED CHAT LINE - SMSCHATArea of the invention

- 5 The present invention relates to Teletext services, and in particular access for the public to exchange messages ("chat") via Teletext pages.

Prior art

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The technique that is most similar to the invention functionally, is the Chat pages on the Internet (IRC, Internet Relay Chat). Here the users can type in messages to each other. The communication is practically instantaneous, and
15 the users experiences a feeling of "talking" to each other.

To access the Internet, users has to install particular equipment, like personal computers and modems, at least this is the present situation. Furthermore the system is
20 not universally available, i.e. big parts of the population is connected to the Internet but seldom or not at all.

Brief description of the invention

- 25 It is an object of the invention to provide a service for text based "conversation" which is universally available for the majority of the population without investments in specially designed equipment.
- 30 This is achieved according to the invention by using a normal mobile phone with the ability to send SMS messages (Short Message System), e.g. a GSM telephone, as the terminal and Teletext as the communication medium. Users of the invention transmit SMS messages from their mobile phones
35 to a dedicated Teletext page. The text messages are placed in a queue of pages rolling past said Teletext page. Everyone possessing television receivers equipped with Teletext decoders can read the messages, and everyone with a mobile

phone subscription at a telephone operator offering smsChat can send/answer messages. This means a system based on universal and standardized structures for communication that are widely available in the society.

5

In addition to sending messages via Teletext, the system can provide functions like:

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- To send messages directly to other users
- To use colours and graphics on messages that is to appear on Teletext
- Monitoring of all messages sent to Teletext. The users

15

turn on a notice service for a defined search term. If the search term occur in a message, a copy of the message is automatically sent directly to the mobile phone of the user.

20

The system also comprises censorship of messages with unwanted content, dynamically updating of statistical functions and the possibility of several Teletext pages.

25

The scope of the invention is as defined in the appended claims.

Description of embodiments

30

The system is now to be described further with reference to the appended figure. In the figure a mobile telephone or cellular network serving a multitude of mobile phones is denoted (1). In said network there exist a netgate (2), which is the network providers central unit for sending and receiving SMS messages. When a user of a mobile phone

35 wishes to post a message on Teletext, he sends a SMS message to the netgate. The message includes an initial command and the text itself which is wanted placed on Teletext. The commands are specific commands agreed upon

with the network provider, i.e. codes that are understood by the netgate. The netgate reads from the initial command that this is a smsChat message, and transfers the message to the smsChat server (3) of a Teletext provider.

- 5 Alternatively the user can send the message to a telephone number which is dedicated smsChat messages. In this alternative messages are addressed directly to the server (3).

10 As shown in the figure, several networks operated by different network providers may be served by the same smsChat server. Each network provider can arrange with the Teletext provider to have his specific set of commands.

15 The transfer of data between netgate (2) and smsChat server (3) is based on presently available technology and may be effected via e.g. a Intranet, the Internet or a direct line. The transfer is based on known communication protocols like tcp/ip, ipx, X.25, etc. The specific way for transferring data is of no consequence to the invention.

20

The smsChat server (3) receives the messages from the netgate (2) and processes the same. The server (3) execute the commands entered by the user. These also includes the main command to place a message on a Teletext page. The smsChat
25 server may be broken up into several processors (computers/servers) and applications. The construction may vary according to which commands the server is to serve and where the applications is placed. The applications may for instance be placed at a cellular network operator, Teletext
30 operator or at a third party who is responsible for operating the server and its applications.

The smsChat server generates the Teletext page containing the message, places the page in a queue with other Teletext
35 pages and transfers the pages to a Teletext inserter (6), which transmit the page onto the public television network. The Teletext incerter (6) is a commercially available equipment that exists in several types from different pro-

ducers. The common television viewer can read the messages as they appear on said page, and may eventually answer a message if its content is of interest. The transfer between smsChat server(s) and Teletext inserter can be done using
5 the same techniques for data transmission as was mentioned earlier.

The netgate adds the users telephone number (A-number) to the message, as the number uniquely identifies the user.
10 The smsChat server (3) communicate with a database (4). The object of the database is to process incoming messages, to impose control functions.

The database (4) includes a user register containing user
15 information. When a first message is received from a new user, said user is assigned an anonymous user number. The user number is connected to the mobile phone telephone number. The users can record information like name, age, sex, pet name and zip code, etc., with their user number. The
20 user number and possibly other recorded data can be placed as a heading on each message posted on Teletext.

The database (4) can additionally include a log registry containing all messages received. It could also be extended
25 to include a registry with nasty words. Said registry can be employed for automatic censorship of illegal and offending words. The database allow for making statistics concerning the use of the system. These additions are meant as possibilities, and not as prerequisites for the smsChat
30 system to work.

Unwanted user numbers may be closed out from the service. Either in a specific quarantine time or as a permanent close-out.

35

Quarantine

Quarantine is used for users that breaks the rules of the system. A quarantine is given in days, hours or minutes.

- 5 When a quarantined user sends a message, there will appear on the Teletext page a message header containing user information and notice of remaining quarantine time.

The system comprises three ways of giving quarantine:

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1. Ordinary users can send a PUNISH message concerning another user. Each user is assigned a confidence parameter indicating the amount of quarantine (length in seconds) he/her is enabled to give other users. One positive and
15 one negative PUNISH can be given per quarantine.

2. System operators are selected users with high confidence parameter and immunity against PUNISH. These have a superior responsibility for monitoring the pages. They can
20 mete out several negative and positive PUNISH on the same quarantine.

3. Administrator users are users with software connected to the smsChat server via an Intranet or the Internet. In
25 addition to give quarantine, they monitor message logs and adjust user information.

Automatic censorship

- 30 Three different types of censorship are performed before messages are entered into the database:

1. User control - checks whether the user has quarantine.
- 35 2. Text control - All unwanted words are entered into a register. The system looks for unwanted words and expressions. Two searches are performed on each message:

a) Search for unwanted word which is replaced with XXX. The message is presented on Teletext without the unwanted words.

5

b) The system replaces all characters that not are letters, and several identical letters in succession. A new search is performed in the text and if unwanted words now are found the message is stopped. On the Teletext page the message is replaced with the message: "Message stopped due to automatic censorship". If for instance "CAKE" is an unwanted word, the system will stop words like "C..A..K..E", "CCCAAAKKKKKEEEEE" and "C-A-K-E".

10
15

3. Control of identical messages. Several identical messages are stopped by the system. Identical spam messages are thus avoided.

20 Commands

The first word appearing in a message is a command which controls further processing.

25 **CHAT** - Send a message to Teletext

E.g. "CHATB Hello everybody!!!"

The main command is a CHAT command which will publish a message on a chat page. If the smsChat server serves several chat pages, there is possible to make a CHAT command for each page (e.g. CHATA, CHATB, CHATC), that feeds the message to the wanted page. CHAT command without letter code is routed onto the A page. As CHAT is the command most commonly used, it can be shortened to C, e.g. "CB Hello!".

35 **REC** - Recording of user information

E.g. "REC Honey,23,5002"

The command REC is used for recording of user information. The command is followed by name, age and zip code. The location is taken from a list.

- 5 The user may change the user information, but the user number is fixed. All messages will appear on Teletext with user number and possibly name, age and location, e.g. 10574 Honey (23) Bergen

10 **SEND, OPEN and CLOSE**

A user may send messages directly, anonymous and without censorship to the mobile telephone of another user. The message is sent to the user number of the receiver. The user number of the sender is presented for the receiver.

- 15 Initially the receiver has to use a command to open up the connection for receiving. There also exist a command for closing out messages from the sender. Of reasons for personal protection it is important that users can remain anonymous to each other, and this possibility is taken care of by the present system.

PUNISH

- The users may survey the page(s) themselves and give quarantine to each other with the command PUNISH. Every user has a confidence parameter in the user registry regarding how many seconds of quarantine they can give. It is possible to introduce negative PUNISHment to pardon a quarantine or parts of it.

- 30 If a person is given several punishments, all quarantine time are added. All new users have to start with 600 seconds (10 minutes) quarantine time, for example. There should be a minimum quarantine time collected before the quarantine is effected, e.g. at least 3600 seconds (1 hour) before one has to atone the punishment. The confidence parameter is automatically adjusted through a system which "rewards" according to which quarantines a person is involved in.

System operators or persons with high confidence can be immune against punishment from others. System operators are allowed to use supplementary commands e.g. for adjusting other users personal information data, including the parameter for confidence. If the command PUNISH is offered, system operators should be enabled to regulate quarantines which is in effect by giving negative punishment. Only system operators should be given the right to punish the same person several times for the same error.

NOTICE - When a defined word is shown on Teletext, a copy is transferred to the user.

The command start searches for a defined word and sends messages where these words are occurring to the mobile phone that has initiated the NOTICE command. The search also encompass user information contained in the headers of messages.

E.g. "NOTICE Honey" will send a copy of all messages appearing on Teletext which contains the word "Honey".

NOTICEEND - Automatically ends transfers of messages.

The command automatically cancels a previous NOTICE command.

CLOSEOUT - Gives quarantine to another user.

E.g. "CLOSEOUT 10267 28 Bullying of other users". The message initiates a permanent close-out. User number, duration and a text stating the reason has to be given. The command is reserved for administrators.

Other options

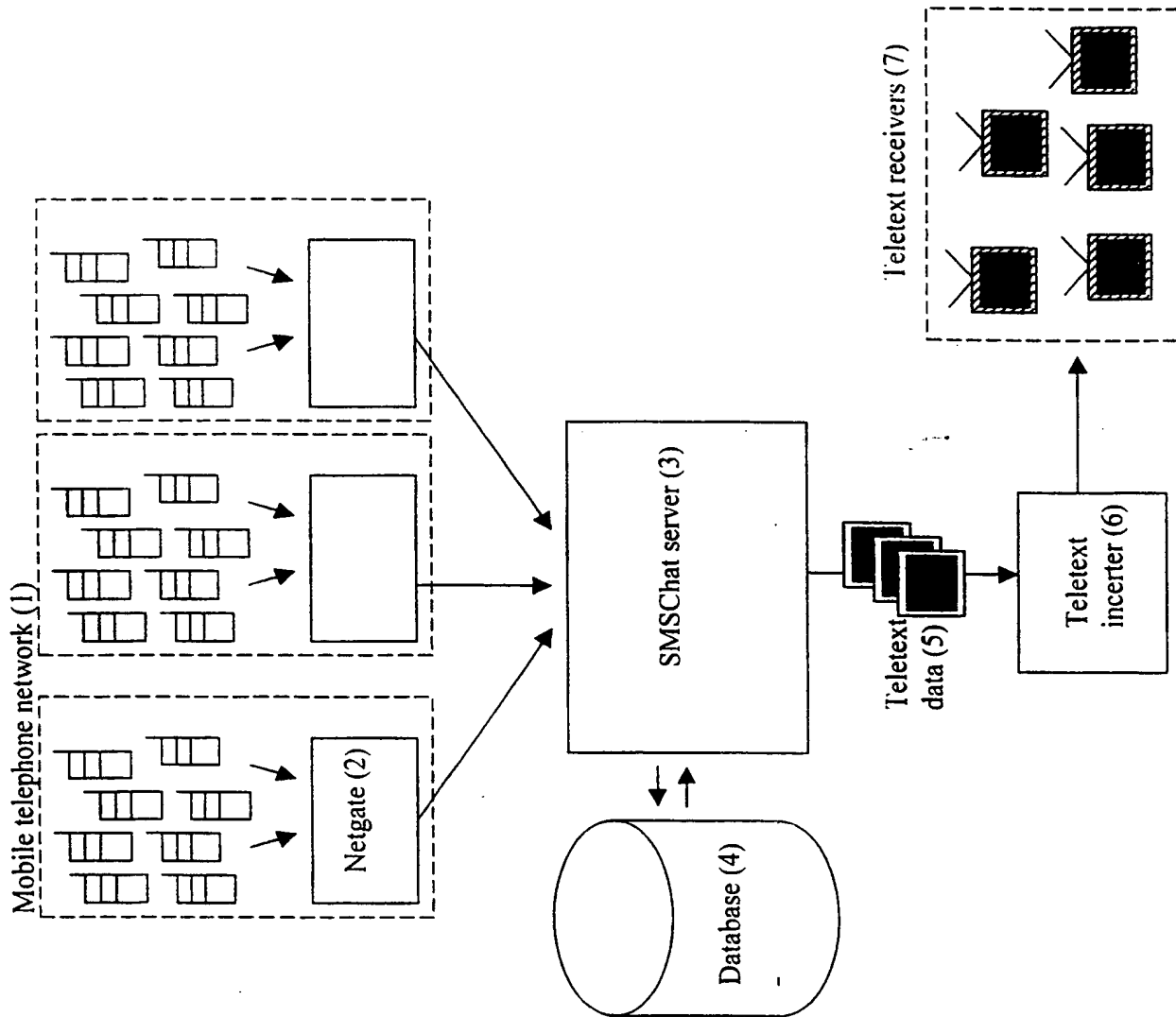
The user can be allowed to use graphical tools in the Teletext system by sending special characters that are interpreted as commands for changing the colour of the text.

Dynamic scrolling speed: The length of the queue decides the speed whereupon pages are scrolling across the screen. When the queue is updated, a counter reflecting the number of lines in the queue is also updated. The period between
5 updating of the queue and the number of lines included in each updating varies with the length of the queue. The number of messages presently receding in the queue are presented in the upper heading of the Teletext page.

P a t e n t c l a i m s

1. Arrangement for exchange of text messages between users of a telecommunication system,
5 c h a r a c t e r i z e d i n that mobile phones in a cellular network are utilized as input terminals, and that the messages are presented on Teletext pages displayed on television receivers which function as output terminals.
- 10 2. Arrangement according to claim 1,
c h a r a c t e r i z e d i n the messages are entered as SMS messages into a netgate belonging to the network operator, which netgate transfers the messages to a server for processing.
- 15 3. Arrangement according to claim 2,
c h a r a c t e r i z e d i n that said server is arranged to generate and update Teletext pages containing said messages, which pages are transferred to a Teletext
20 inserter that publishes said pages.
4. Arrangement according to claim 3,
c h a r a c t e r i z e d i n that said server is connected to a database, which database contains a registry
25 with user information.
5. Method for exchange of messages between users of a telecommunication system,
c h a r a c t e r i z e d i n the following steps:
30
- users enter sends their messages as SMS messages from mobile phones to a netgate (2) owned by a cellular network provider,
 - the netgate communicate the received messages to a
35 smsChat server (3),

- said server (3) processes the incoming messages and generates Teletext pages containing the messages,
 - said Teletext pages are transferred to a Teletext inserter (6),
- 5 • said Teletext inserter (6) publish the pages containing the messages on a public television network.



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graph TD
    subgraph MN1 [Mobile telephone network (1)]
        direction TB
        subgraph NG2 [Netgate (2)]
            direction TB
            NG2_1[ ]
            NG2_2[ ]
            NG2_3[ ]
        end
        subgraph NG2_4 [ ]
            direction TB
            NG2_4_1[ ]
            NG2_4_2[ ]
            NG2_4_3[ ]
        end
        subgraph NG2_5 [ ]
            direction TB
            NG2_5_1[ ]
            NG2_5_2[ ]
            NG2_5_3[ ]
        end
    end
    NG2 --> S3[SMSChat server (3)]
    NG2_4 --> S3
    NG2_5 --> S3
    S3 <--> DB4[(Database (4))]
    S3 --> TD5[Teletext data (5)]
    TD5 --> TI6[Teletext inserter (6)]
    TI6 --> TR7[Teletext receivers (7)]

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The present invention relates to an arrangement and a method for exchange of messages between users in a telecommunications network. Messages are sent from the users mobile phones as SMS messages to a SMS netgate in the telecommunication network. The messages are sent from the netgate to a smsChat server that processes the messages and generates Teletext pages which are transferred to a Teletext inserter which publishes the pages on a public television network.

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INTERNATIONAL SEARCH REPORT

International application No.

PCT/NO 99/00178

A. CLASSIFICATION OF SUBJECT MATTER

IPC6: H04M 3/50, H04N 7/088

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC6: H04N, H04M

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

SE,DK,FI,NO classes as above

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C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	GB 2294608 A (TELSIS HOLDINGS LIMITED), 1 May 1996 (01.05.96), abstract --	1-5
P,X	EP 0880293 A1 (KONINKLIJKE PTT NEDERLAND N.V.), 25 November 1998 (25.11.98), abstract --	1,2,5
A	DE 4101200 A1 (STANDARD ELEKTRIK LORENZ AG), 23 July 1992 (23.07.92), see whole document --	1-5
A	US 4890321 A (NIGEL SETH-SMITH ET AL), 26 December 1989 (26.12.89), see whole document --	1-5

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☒ See patent family annex.

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C (Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	WO 9320654 A1 (JENSEN, ERIK), 14 October 1993 (14.10.93), see whole document -- -----	1-5

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Information on patent family members

02/11/99

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EP	0880293	A1	25/11/98	NONE	
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US	4890321	A	26/12/89	US 4866770 A AT 113782 T AU 606354 B AU 7850587 A DE 3750724 D,T DK 198788 A EP 0318507 A,B SE 0318507 T3 FI 89545 B FI 890683 A JP 2500477 T JP 2752979 B NO 173630 C WO 8801463 A	12/09/89 15/11/94 07/02/91 08/03/88 23/03/95 14/06/88 07/06/89 30/06/93 13/02/89 15/02/90 18/05/98 05/01/94 25/02/88
WO	9320654	A1	14/10/93	AU 4260093 A DK 46992 A EP 0635189 A	08/11/93 08/10/93 25/01/95

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